

STATE OF NEW MEXICO
ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

**IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:**

CASE NOS. 10931 and 10932
Order No. R-10094

**APPLICATION OF THE WISER OIL COMPANY
FOR APPROVAL OF A WATERFLOOD PROJECT,
LEA COUNTY, NEW MEXICO.**

**APPLICATION OF THE WISER OIL COMPANY
TO AUTHORIZE THE EXPANSION OF THE
MALJAMAR CAPROCK UNIT WATERFLOOD
PROJECT AND QUALIFY SAID EXPANSION
FOR THE RECOVERED OIL TAX RATE
PURSUANT TO THE "NEW MEXICO ENHANCED
OIL RECOVERY ACT," LEA COUNTY, NEW
MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on March 3, 1994, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 5th day of April, 1994, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) Division Case Nos. 10930, 10931 and 10932 were consolidated at the time of the hearing for the purpose of testimony.

(3) The applicant in Case No. 10931, The Wiser Oil Company, seeks authority to institute a waterflood project within its proposed Caprock Maljamar Unit Area (being the subject of Case No. 10930) which encompasses the following described acreage, by the injection of water into the Maljamar Grayburg-San Andres Pool, Lea County, New Mexico, through twenty-one initial injection wells located within the unit area as shown on Exhibit "A" attached hereto. The applicant further seeks to qualify the Caprock Maljamar Unit Waterflood Project as an "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

TOWNSHIP 17 SOUTH, RANGE 32 EAST, NMPM

Section 13: SE/4

Section 24: All

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM

Section 17: All

Section 18: E/2, SW/4

Sections 19 and 20: All

Section 21: W/2 W/2, SE/4 NW/4, SE/4 SW/4

Section 27: NW/4 SW/4

Section 28: W/2, SE/4, SW/4 NE/4

Section 29: NE/4 NE/4

Section 33: N/2 NE/4, SE/4 NE/4

(4) The applicant in Case No. 10932, The Wiser Oil Company, seeks an order pursuant to the rules and procedures for Qualification of Enhanced Oil Recovery Projects and Certification for the Recovered Oil Tax Rate, as promulgated by Division Order No. R-9708, qualifying a portion of its Caprock Maljamar Unit, as described in Finding No. (3) above, Maljamar Grayburg-San Andres Pool, Lea County, New Mexico, for the recovered oil tax rate pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(5) Through the presentation of evidence and testimony in these cases, it appears that the applicant's request to certify the Caprock Maljamar Unit Area as an "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" is duplicated in Case No. 10932 and therefore unnecessary.

(6) Division Case No. 10932 should be dismissed.

(7) The wells located within the applicant's Caprock Maljamar Unit Area are in an advanced state of depletion and should properly be classified as "stripper wells".

(8) The proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(9) Applicant estimates that secondary recovery operations within the Caprock Maljamar Unit Area will result in the recovery of an additional 6.8 million barrels of oil.

(10) Division records and testimony presented at the hearing indicates that within the Caprock Maljamar Unit Area there are five Division Orders currently in effect authorizing the injection of water for secondary recovery purposes into the Maljamar Grayburg-San Andres Pool. These division orders are as follows:

- a) Division Order No. R-2156 dated January 3, 1962 authorized Murphy H. Baxter to institute a waterflood project within the following described area, said project designated the Murphy H. Baxter Maljamar Waterflood Project:

TOWNSHIP 17 SOUTH, RANGE 32 EAST, NMPM

Section 13: SE/4

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM

Section 16: S/2, NE/4

Section 17: N/2

- b) Division Order No. R-2157 dated January 3, 1962 authorized Zapata Petroleum Corporation to institute a waterflood project within the following described area, said project designated the Zapata Maljamar Western State Waterflood Project:

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM

Section 17: S/2

Section 19: NE/4

Section 20: N/2

- c) Division Order No. R-2769 dated September 16, 1964 authorized Sunset International Petroleum Corporation to institute a waterflood project within the Mal-Gra Unit Area, described as follows, said project designated the Mal-Gra Unit Waterflood Project:

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM

Section 20: S/2

Section 21: W/2 W/2, SE/4 NW/4, SE/4 SW/4

- d) Division Order No. R-3011 dated December 3, 1965 authorized Sinclair Oil and Gas Company to institute a waterflood project within the following described area, said project designated the Sinclair Maljamar Johns Waterflood Project:

TOWNSHIP 17 SOUTH, RANGE 32 EAST, NMPM

Section 24: All

- e) Division Order No. R-3129 dated October 4, 1966 authorized Pennzoil Company to institute a waterflood project within the following described area, said project designated the Pennzoil Maljamar Waterflood Project:

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM

Section 28: S/2, NW/4

Section 33: N/2 NE/4, SE/4 NE/4

(11) Division Order Nos. R-2156, R-2157, R-2769, R-3011 and R-3129, which orders approved, respectively, the Murphy H. Baxter Maljamar, Zapata Maljamar Western State, Mal-Gra Unit, Sinclair Maljamar Johns, and the Pennzoil Maljamar Waterflood Projects, should be superseded by this order.

(12) Division records further indicate that eleven of the proposed twenty-one injection wells, described as follows, have previously been permitted for injection into the Maljamar Grayburg-San Andres Pool:

<u>WELL NAME & NUMBER</u>	<u>WELL LOCATION</u>	<u>ORDER NUMBER</u>
Western State No. 15	Unit L, 17-17S-33E	R-2157
Western State No. 13	Unit J, 17-17S-33E	WFX-171
Western State No. 8	Unit N, 17-17S-33E	R-2157
Western State No. 10	Unit P, 17-17S-33E	WFX-200
Phillips "B" State No. 5	Unit B, 19-17S-33E	R-2157-A
Western State No. 6	Unit D, 20-17S-33E	R-2157
Western State No. 5	Unit B, 20-17S-33E	WFX-139
Phillips "B" State No. 3	Unit H, 19-17S-33E	R-2157-A
Western State No. 3	Unit F, 20-17S-33E	WFX-139
Western State No. 4	Unit H, 20-17S-33E	WFX-200
Mal-Gra Unit No. 7	Unit L, 20-17S-33E	R-2769

(13) The evidence presented indicates that the Western State Well No. 4, as described above, is currently plugged and abandoned.

(14) In order to bring these injection wells into compliance with current Division Rules and Regulations, the Division should examine Form C-108 data (Authorization to Inject) submitted for each of these wells by the applicant and should re-permit these wells under modern regulations.

(15) The applicant should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(16) The injection of water into each of the wells shown on Exhibit "A" should be accomplished through internally plastic-lined tubing installed in a packer set within 100 feet of the uppermost injection perforation or casing shoe; the casing-tubing annulus should be filled with an inert fluid and a gauge or approved leak-detection device should be attached to the annulus in order to determine leakage in the casing, tubing or packer.

(17) Prior to commencing injection operations into the wells shown on Exhibit "A", the casing in each well should be pressure tested throughout the interval from the surface down to the proposed packer setting depth to assure the integrity of such casing.

(18) The injection wells or pressurization system should be initially equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 814 psi.

(19) The Division Director should have the authority to administratively authorize a pressure limitation in excess of the pressure limitation described in Finding No. (18) above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(20) There is one well located within the "area of review", the Mal-Gra Unit "B" Well No. 2 located in Unit O of Section 20, which reportedly has casing leaks. The applicant should be required to consult with the supervisor of the Hobbs district office of the Division in order to determine if this well, in its present condition, provides a conduit for migration of injected fluid. If so, the applicant should conduct repairs on the well in a manner acceptable to the Division prior to conducting injection operations within one half mile.

(21) The operator should give advance notification to the supervisor of the Hobbs District Office of the Division of the date and time of the installation of injection equipment, the conductance of any remedial cement operations, and of the mechanical integrity pressure tests in order that the same may be witnessed.

(22) The application should be approved and the project should be governed by the provisions of Rule Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

(23) At the time of the hearing, the applicant requested that the subject waterflood be certified by the Division as a qualified "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(24) Implementation of secondary recovery operations within the Caprock Maljamar Unit will occur in three phases.

(25) Previous waterflood operations within the proposed unit area have been conducted on 80-acre five spot injection patterns.

(26) Within the Caprock Maljamar Unit, the applicant proposes to conduct waterflood operations on 40-acre five spot injection patterns. Such action will require that the applicant drill and equip fifty-nine new producing wells, drill and equip eleven new injection wells, convert forty producing wells to injection, and conduct workovers on thirty-eight wells, as well as upgrade tank battery and injection facilities.

(27) The proposed change in operations within the project area will require a capital expenditure of approximately twenty-three million dollars.

(28) The applicant requests certification of the project area on the contention that it has or will expand the use of enhanced oil recovery technology and will increase the size of the geologic area being flooded representing a unique area of activity.

(29) Geologic variations generally indicate that the 80-acre five spot injection pattern previously utilized within the Caprock Maljamar Unit Area may have been too large and likely resulted in substantial volumes of oil being unrecovered.

(30) The reduction in the waterflood injection pattern from 80 acres to 40 acres will improve the sweep efficiency and should increase the ultimate oil recovery from the proposed project area.

(31) The evidence presented indicates that the subject waterflood meets all the criteria for certification.

(32) The certified "project area" should initially comprise the area within the Caprock Maljamar Unit, described in Finding No. (3) above, provided however, the "project area" and/or the producing wells eligible for the recovered oil tax rate may be contracted and reduced dependent upon the evidence presented by the applicant in its demonstration of the occurrence of a positive production response.

(33) To be eligible for the EOR credit, the operator should advise the Division when water injection commences within Phase I, II and III and at such time, request the Division certify such phases or areas to the New Mexico Taxation and Revenue Department.

(34) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of positive production response, which application shall identify the area actually benefitting from enhanced recovery operations, and identifying the specific wells which the operator believes are eligible for the credit. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to The Department of Taxation and Revenue those lands and wells which are eligible for the credit.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, The Wiser Oil Company, is hereby authorized to institute a waterflood project within its Caprock Maljamar Unit Area which encompasses the following described acreage, by the injection of water into the Maljamar Grayburg-San Andres Pool, Lea County, New Mexico, through twenty-one initial injection wells located within the unit area as shown on Exhibit "A" attached hereto.

TOWNSHIP 17 SOUTH, RANGE 32 EAST, NMPM

Section 13: SE/4

Section 24: All

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM

Section 17: All

Section 18: E/2, SW/4

Sections 19 and 20: All

Section 21: W/2 W/2, SE/4 NW/4, SE/4 SW/4

Section 27: NW/4 SW/4

Section 28: W/2, SE/4, SW/4 NE/4

Section 29: NE/4 NE/4

Section 33: N/2 NE/4, SE/4 NE/4

(2) The applicant shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(3) Injection into the wells shown on Exhibit "A" shall be accomplished through plastic-lined tubing installed in a packer set approximately within 100 feet of the uppermost injection perforation or casing shoe; the casing-tubing annulus shall be filled with an inert fluid and a gauge or approved leak-detection device shall be attached to the annulus in order to determine leakage in the casing, tubing or packer.

(4) The injection wells or pressurization system shall be equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 814 psi.

(5) The Division Director shall have the authority to administratively authorize a pressure limitation in excess of the above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(6) Prior to commencing injection operations into the wells shown on Exhibit "A", the casing in each well shall be pressure-tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(7) Prior to initiating injection operations within one-half mile of the Mal-Gra Unit "B" Well No. 2, located in Unit O of Section 20, the applicant shall consult with the supervisor of the Hobbs district office of the Division in order to determine if this well, in its present condition, provides a conduit for migration of injected fluid. If so, the applicant shall conduct repairs on the well in a manner acceptable to the Division.

(8) The operator shall give advance notification to the supervisor of the Hobbs District Office of the Division of the date and time of the installation of injection equipment, the conductance of remedial cement operations, and of the mechanical integrity pressure tests, in order that the same may be witnessed.

(9) The applicant shall immediately notify the supervisor of the Hobbs District Office of the Division of the failure of the tubing, casing or packer in any of the injection wells, the leakage of water or oil from or around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area, and shall take such steps as may be timely and necessary to correct such failure or leakage.

(10) The subject waterflood is hereby designated the Caprock Maljamar Unit Waterflood Project and shall be governed by the provisions of Rule Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

(11) Monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rule Nos. 706 and 1115 of the Division Rules and Regulations.

(12) Division Order Nos. R-2156, R-2157, R-2769, R-3011 and R-3129, which orders approved, respectively, the Murphy H. Baxter Maljamar, Zapata Maljamar Western State, Mal-Gra Unit, Sinclair Maljamar Johns, and the Pennzoil Maljamar Waterflood Projects, are hereby superseded by this order.

(13) The subject waterflood is hereby certified as a qualified "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(14) The certified "project area" shall initially coincide with the Caprock Maljamar Unit Area, described in Finding No. (3) above, provided however, the "project area" and/or the producing wells eligible for the recovered oil tax rate may be contracted and reduced dependent upon the evidence presented by the applicant in its demonstration of the occurrence of a positive production response.

(15) To be eligible for the EOR credit, the operator shall advise the Division when water injection commences within Phase I, II and III and at such time, request the Division certify such phases or areas to the New Mexico Taxation and Revenue Department.

(16) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of positive production response, which application shall identify the area actually benefitting from enhanced recovery operations, and identifying the specific wells which the operator believes are eligible for the credit. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to The Department of Taxation and Revenue those lands and wells which are eligible for the credit.

(17) The application of The Wiser Oil Company in Case No. 10932 for an order pursuant to the rules and procedures for Qualification of Enhanced Oil Recovery Projects and Certification for the Recovered Oil Tax Rate, qualifying a portion of its Caprock Maljamar Unit, Lea County, New Mexico, for the recovered oil tax rate pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5), is hereby dismissed.

Case No. 10931 and 10932

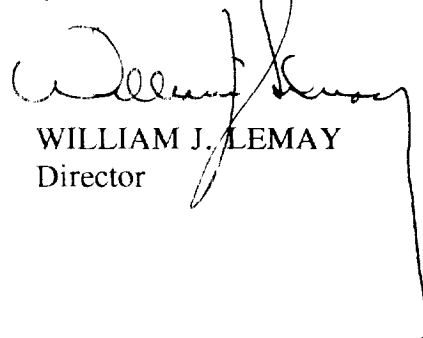
Order No. R-10094

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(18) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY
Director

S E A L

EXHIBIT "A"
CASE NO. 10932
DIVISION ORDER NO. R-10094
CAPROCK MAJAMAR UNIT WATERFLOOD PROJECT
APPROVED INJECTION WELLS

Former Well Name and Number	New Well No. CMT	Location	Unit	S-T-R	Injection Perforations	Packer Depth	Tubing Size
Western State No. 15*	19	1980' FSL & 660' FWL	L	17-17S-33E	4203' - 4396'	4146'	2 3/8"
Western State No. 14	20	1980' FSL & 1980' FWL	K	17-17S-33E	4124' - 4396'	4024'	2 3/8"
Western State No. 13*	21	1650' FSL & 810' FWL	J	17-17S-33E	4260' - 4415'	4191'	2 3/8"
Western State No. 11	29	660' FSL & 1980' FEL	M	17-17S-33E	4170' - 4380'	4070'	2 3/8"
Western State No. 8*	30	660' FSL & 1980' FEL	N	17-17S-33E	4198' - 4460'	4148'	2 3/8"
Western State No. 7	31	660' FSL & 1980' FEL	O	17-17S-33E	4238' - 4416'	4138'	2 3/8"
Western State No. 10*	32	660' FSL & 1980' FEL	P	17-17S-33E	4216' - 4426'	4187'	2 3/8"
Phillips "B" State No. 4	39	660' FSL & 660' FEL	B	19-17S-33E	4080' - 4408'	4066'	2 3/8"
Phillips "B" State No. 6*	40	660' FSL & 660' FEL	A	19-17S-33E	4166' - 4503'	4066'	2 3/8"
Western State No. 2	41	660' FSL & 660' FEL	D	20-17S-33E	4162' - 4375'	4122'	2 3/8"
Western State No. 5*	42	660' FSL & 660' FEL	C	20-17S-33E	4200' - 4442'	4100'	2 3/8"
Western State No. 9	43	660' FSL & 660' FEL	B	20-17S-33E	4215' - 4468'	4143'	2 3/8"
Phillips "B" State No. 3*	44	660' FSL & 660' FEL	A	20-17S-33E	4228' - 4430'	4128'	2 3/8"
Western State No. 6	52	1980' FNL & 1980' FEL	G	19-17S-33E	4098' - 4350'	3998'	2 3/8"
Phillips "B" State No. 3*	53	1980' FNL & 660' FEL	H	19-17S-33E	4080' - 4346'	4023'	2 3/8"

Wells which have previously been approved for injection.

<i>Former Well Name and Number</i>	<i>New Well No. CMU</i>	<i>Location</i>	<i>Unit</i>	<i>S-T-R</i>	<i>Injection Perforations</i>	<i>Packer Depth</i>	<i>Tubing Size</i>
Western State No. 16	54	1980' FNL & 660' FWL	E	20-17S-33E	4176' - 4426'	4076'	2 3/8"
Western State No. 2	55	1980' FNL & 1980' FWL	F	20-17S-33E	4170' - 4312'	3995'	2 3/8"
Western State No. 1-Y	56	1880' FNL - 1980' FEL	G	20-17S-33E	4068' - 4380'	3968'	2 3/8"
**Western State No. 4*	57	1980' FNL - 660' FEL	H	20-17S-33E	Unknown	Unknown	2 3/8"
**Phillips "B" State No. 2	67	1980' FSL - 660' FEL	I	19-17S-33E	Unknown	Unknown	2 3/8"
Mal-Gra Unit No. 7*	68	1650' FSL & 990' FWL	L	20-17S-33E	4190' - 4355'	4090'	2 3/8"

* Denotes wells which have previously been approved for injection.
 ** Currently P&A'd.